

ABSTRACT OF THE DISCLOSURE

A gateway supports communications between network devices connected to different private networks. When a tunnel setup request message is received from a host connected to a first private network to setup a tunnel to a second private network connected to a public network, a control unit of the gateway communicates with the gateway of the second private network, negotiates necessary information, and sets up a VPN tunnel utilizing the information. If the private networks have identical network address, or if network address of one private network is included in the network address of the other, a new network address table is created such that the two private networks can use different network addresses in the VPN tunnel. With respect to data packets being transmitted from the host of the first private network, or from the second private network, an address is translated based on the new network address table, and therefore, the translated address is forwarded.